In the Claims

What is claimed is:

1. An apparatus comprising:

at least one signal source producing sensory data;

a processing device operably coupled to said signal source to transform said sensory data into a display signal and/or into an audible sound;

a display device to receive and display said display signal as a viewable image, said image observable by an operator of a motor vehicle;

whereby said image is comprised of information regarding at least one operating parameter.

2. An apparatus as in Claim 1, wherein said vehicle is a four-wheel drive vehicle.

3. An apparatus as in Claim 1, wherein said at least one operating parameter is the operation of an anti-lock braking system (ABS) and/or the behavior of said vehicle as to roll over stability and/or the operation of said vehicle as to the power consumed by at least one vehicle component and/or the operation of said vehicle as to the torque and/or braking forces delivered to the wheels and/or the steering angle of the front wheels.

4. An apparatus as in Claim 1, wherein said at least one signal source is a sensor comprised of a wheel speed sensor, a wheel load sensor, a gravity direction sensor, a harmonic frequency sensor, a vehicle component power measuring sensor, a brake signal amplitude sensor, a torque amplitude signal sensor, a steering angle sensor, an in-line

induction sensor, an inserted serial current sensor, a clampon induction sensor and/or a flux sensor.

5. An apparatus as in Claim 1, wherein said processing device is comprised of a vehicle CPU or a display CPU.

6. An apparatus as in Claim 1, wherein said display device is a LED, LCD, vacuum florescent means, GPS display or trip computer, numerical display, gauge, meter and/or PDA.

7. An apparatus as in Claim 1, wherein said image is at least one bar chart, scalar bar chart, bar chart in pie segment format, and/or at least one image of a power consumption component and associated bar chart, and/or an image of at least one power consumption component and associated numerical display and/or an image displaying the torque and/or braking force delivered to the wheels and/or an image displaying the torque and/or braking delivered to the front pair of wheels and to the rear pair of wheels and/or an image displaying the slippage of one or more wheels with regard to the other wheels and/or an image displaying proximity to vehicle roll over and/or an image displaying the steering angle of the front wheels.

8. An apparatus as in Claim 1, wherein said at least one image is comprised of a highlighted image.

9. An apparatus as in Claim 1, wherein said image is comprised of a display varying in time in one or more characteristics to include color, hue, shading, density of cross hatching, contrast, content, shape, orientation, pattern and/or illumination.

10. An apparatus as in Claim 1, wherein said audible sound can be heard by said operator.

11. An apparatus as in Claim 2, wherein said display signal is comprised of torque or braking force delivered to said wheels and said display device is comprised of a PDA.

12. A method comprising:

generating a data signal from at least one sensor;

processing said data signal producing at least one display image and/or into an audible sound;

displaying said at least one display image on a display device observable by an operator of a motor vehicle;

said at least one display image comprising at least one image representing information regarding at least one vehicle operating parameter.

13. A method as in Claim 12, wherein said vehicle is a four-wheel drive vehicle.

14. A method as in Claim 12, wherein said at least one operating parameter is the operation of an anti-lock braking system (ABS) and/or the behavior of said vehicle as to roll over stability and/or the operation of said vehicle as to the power consumed by at least one

vehicle component and/or the operation of said vehicle as to the torque and/or braking forces delivered to the wheels and/or the steering angle of the front wheels.

15. A method as in Claim 12, wherein said at least one signal source is a sensor comprised of a wheel speed sensor, a wheel load sensor, a gravity direction sensor, a harmonic frequency sensor, a vehicle component power measuring sensor, a brake signal amplitude sensor, a torque amplitude signal sensor, a steering angle sensor, an in-line induction sensor, an inserted serial current sensor, a clampon induction sensor and/or a flux sensor.

16. A method as in Claim 12, wherein said processing device is comprised of a vehicle CPU or a display CPU.

17. A method as in Claim 12, wherein said display device is a LED, LCD, vacuum florescent means, GPS display and/or trip computer, numerical display, gauge, meter and/or PDA.

18. A method as in Claim 12, wherein said image is at least one bar chart, scalar bar chart, bar chart in pie segment format, and/or at least one image of a power consumption component and associated bar chart, and/or an image of at least one power consumption component and associated numerical display and/or an image displaying the torque and/or braking force delivered to the wheels and/or an image displaying the torque and/or braking delivered to the front pair of wheels and to the rear pair of wheels and/or an image displaying the slippage of one or more wheels with

regard to the other wheels and/or an image displaying proximity to vehicle roll over and/or an image displaying the steering angle of the front wheels.

19. A method as in Claim 12, wherein said at least one image is comprised of a highlighted image.

20. A method as in Claim 12, wherein said image is comprised of a display varying in time in one or more characteristics to include color, hue, shading, density of cross hatching, contrast, content, shape, orientation, pattern and/or illumination.

21. A method as in Claim 12, wherein said audible sound can be heard by said operator.

22. A method as in Claim 13, wherein said display signal is comprised of torque or braking force delivered to said wheels and said display device is comprised of a PDA ´

23. A processor-based system comprising:

a data signal generation means producing a data signal;

an interface to receive the data signal;

a device operably coupled to said interface to transform the data signal into at least one frame of display data and/or into an audible sound, and;

a display device displaying said at least one frame of display data for the operator of a motor vehicle;

whereby said display data comprising an image of information regarding at least one vehicle operating parameter.

24. A system as in Claim 23, wherein said vehicle is a four-wheel vehicle.

25. A system as in Claim 23, wherein said at least one operating parameter is the operation of an anti-lock braking system (ABS) and/or the behavior of said vehicle as to roll over stability and/or the operation of said vehicle as to the power consumed by at least one vehicle component and/or the operation of said vehicle as to the torque and/or braking forces delivered to the wheels and/or the steering angle of the front wheels.

26. A system as in Claim 23, wherein said at least one signal source is a sensor comprised of a wheel speed sensor, a wheel load sensor, a gravity direction sensor, a harmonic frequency sensor, a vehicle component power measuring sensor, a brake signal amplitude sensor, a torque amplitude signal sensor, a steering angle sensor, an in-line induction sensor, an inserted serial current sensor, a clampon induction sensor and/or a flux sensor.

27. A system as in Claim 23, wherein said processing device is comprised of a vehicle CPU or a display CPU.

28. A system as in Claim 23, wherein said display device is a LED, LCD, vacuum florescent means, GPS display and/or trip computer, numerical display, gauge, meter and/or PDA.

29. A system as in Claim 23, wherein said image is at least one bar chart, scalar bar chart, bar chart in pie segment format, and/or at least one image of a power consumption component and associated bar chart, and/or an image of at least one power consumption component and associated numerical display and/or an image displaying the torque and/or braking force delivered to the wheels and/or an image displaying the torque and/or braking delivered to the front pair of wheels and to the rear pair of wheels and/or an image displaying the slippage of one or more wheels with regard to the other wheels and/or an image displaying proximity to vehicle roll over and/or an image displaying the steering angle of the front wheels.

30. A system as in Claim 23, wherein said at least one image is comprised of a highlighted image.

31. A system as in Claim 23, wherein said image is comprised of a display varying in time in one or more characteristics to include color, hue, shading, density of cross hatching, contrast, content, shape, orientation, pattern and/or illumination.

32. A system as in Claim 23, wherein said audible sound can be heard by said operator.

33. A system as in Claim 24, wherein said display signal is comprised of torque or braking force delivered to said wheels and said display device is comprised of a PDA

34. An item comprising a medium storing instructions that, if executed, enable a process-based system to perform steps comprising:

receiving a data signal comprised of information regarding at least one operating parameter;

generating from said data signal a command; and

transforming said data signal based on the command into display information and/or into an audible sound;

displaying said display information on a display for the operator of a motor vehicle.

35. The item of Claim 34, comprising a medium storing instructions that, if executed, enable a process-based system to

perform said step of receiving a data signal comprised of information regarding at least one operating parameter, whereby said at least one operating parameter is for a four-wheel drive vehicle.

36. The item of Claim 34, comprising a medium storing instructions that, if executed, enable a process-based system to

perform said step of receiving a data signal comprised of information regarding at least one operating parameter, whereby said at least one operating parameter is the operation of an anti-lock braking system (ABS) and/or the behavior of said vehicle as to roll over stability and/or the operation of said vehicle as to the power consumed by at least one vehicle component and/or the operation of said vehicle as to the torque and/or braking forces delivered to the wheels and/or the steering angle of the front wheels.

37. The item of Claim 34, comprising a medium storing instructions that, if executed, enable a process-based system to

perform said step of receiving a data signal comprised of information regarding at least one signal source whereby said signal source is a wheel speed sensor, a wheel load sensor, a gravity direction sensor, a harmonic frequency sensor, a vehicle component power measuring sensor, a brake signal amplitude sensor, a torque amplitude signal sensor, a steering angle sensor, an in-line induction sensor, an inserted serial current sensor, a clampon induction sensor or a flux sensor.

38. The item of Claim 34, comprising a medium storing instructions that, if executed, enable a process-based system to perform steps to

transform said data signal by using a vehicle CPU or a display CPU.

39. The item of Claim 34, comprising a medium storing instructions that, if executed, enable a process-based system to

display said display information on a LED, LCD, vacuum florescent means, GPS display and/or trip computer, numerical display, gauge, meter and/or PDA.

40. The item of Claim 34, comprising a medium storing instructions that, if executed, enable a process-based system to

display an image comprised of at least one bar chart, scalar bar chart, bar chart in pie segment format, and/or at least one image of a power consumption component and associated bar chart, and/or an image of at least one power consumption component and associated numerical display and/or an image displaying the torque and/or braking force delivered to the wheels and/or an image displaying the torque and/or braking delivered to the front pair of wheels and to the rear pair of wheels and/or an image displaying the slippage of one or more wheels with regard to the other wheels and/or an image displaying proximity to vehicle roll over and/or an image displaying the steering angle of the front wheels.

41. The item of Claim 34, comprising a medium storing instructions that, if executed, enable a process-based system to

display at least one image comprised of a highlighted image.

42. The item of Claim 34, comprising a medium storing instructions that, if executed, enable a process-based system to

display said image varying in time in one or more characteristics to include color, hue, shading, density of cross hatching, contrast, content, shape, orientation, pattern and/or illumination.

43. The item of Claim 34, comprising a medium storing instructions that, if executed, enable a process-based system to

create said audible sound to be heard by said operator.

44. The item of Claim 35, comprising a medium storing instructions that, if executed, enable a process-based system to

receive said data signal comprised of torque and/or braking information for a four-wheel drive motor vehicle;

generate from said data signal said command; and

transform said data signal based on the command into said display information and/or into said audible sound;

display said display information on said display for said operator of a motor vehicle, said display comprised of a PDA and/or a GPS

45. An image creating and/or a sound creating device comprising:

a data signal generation means producing a data signal;

an interface to receive the data signal;

a device operably coupled to said interface to transform the data signal into at least one frame of display data and/or into an audible sound, and;

a display device displaying said at least one frame of display data for the operator of a motor vehicle and/or a sound producing device creating said audible sound for said operator,

whereby said display data comprising an image of information and/or said audible sound regarding at least one vehicle operating parameter.

46. The image creating and/or a sound creating device of Claim 45, wherein said vehicle is a four-wheel vehicle.

47. The image creating and/or a sound creating device of Claim 45, wherein said at least one operating parameter is the operation of an anti-lock braking system (ABS) and/or the behavior of said vehicle as to roll over stability and/or the operation of said vehicle as to the power consumed by at least one vehicle component and/or the operation of said vehicle as to the torque and/or braking forces delivered to the wheels and/or the steering angle of the front wheels.

48. The image creating and/or a sound creating device of Claim 45, wherein said at least one signal source is a sensor comprised of a wheel speed sensor, a wheel load sensor, a gravity direction sensor, a harmonic frequency sensor, a vehicle component power measuring sensor, a brake signal amplitude sensor, a torque amplitude signal sensor, a steering angle sensor, an in-line induction sensor, an inserted serial current sensor, a clampon induction sensor and/or a flux sensor.

49. The image creating and/or a sound creating device of Claim 45, wherein said processing device is comprised of a vehicle CPU or a display CPU.

50. The image creating and/or a sound creating device of Claim 45, wherein said display device is a LED, LCD, vacuum florescent means, GPS display and/or trip computer, numerical display, gauge, meter and/or PDA.

51. The image creating and/or a sound creating device of Claim 45, wherein said image is at least one bar chart, scalar bar chart, bar chart in pie segment format, and/or at least

one image of a power consumption component and associated bar chart, and/or an image of at least one power consumption component and associated numerical display and/or an image displaying the torque and/or braking force delivered to the wheels and/or an image displaying the torque and/or braking delivered to the front pair of wheels and to the rear pair of wheels and/or an image displaying the slippage of one or more wheels with regard to the other wheels and/or an image displaying proximity to vehicle roll over and/or an image displaying the steering angle of the front wheels.

52. The image creating and/or a sound creating device of Claim 45, wherein said at least one image is comprised of a highlighted image.

53. The image creating and/or a sound creating device of Claim 45, wherein said image is comprised of a display varying in time in one or more characteristics to include color, hue, shading, density of cross hatching, contrast, content, shape, orientation, pattern and/or illumination.

54. The image creating and/or a sound creating device of Claim 46, wherein said display signal is comprised of torque or braking force delivered to the wheels of said vehicle.

55. A data collection and display system for a four-wheel drive vehicle, including a frame supported by wheels for movement over the ground, said wheels comprised of a pair of front wheels, and a pair of rear wheels, one of said pairs being main drive wheels, and the other of said pairs being auxiliary drive wheels, a driving force control system

controlling engagement forces of at least one clutch to thereby control at least one driving force distributed to said auxiliary drive wheels, a power source which is mounted on the frame and which drives at least two of the wheels, an operator's seat mounted on the frame, a steering system enabling the operator to steer the vehicle,

said data collection and display system comprising:

at least one sensing means producing at least one source electric signal proportional to said at least one distributed driving force,

at least one calculating means converting said at least one source electric signal to at least one electric display signal,

at least one electric signal transmission means connecting said sensing means to said at least one calculating means,

at least one display means,

at least one electric display signal transmission means connecting said at least one calculating means to said at least one display means,

whereby said at least one electric signal transmission means transfers said at least one source electric signal from said sensing means to said at least one calculating means, said calculating means creating at least one electric display signal, said at least one electronic display signal transmitted by said at least one electric display signal transmission means to said at least one display means, said display means creating an image visible to the operator, said image proportionally depicting said driving force.

56. A data collection and display system as in Claim 55, wherein said at least one clutch is an electromagnetic clutch.

57. A data collection and display system as in Claim 56, wherein said at least one sensing means is a Hall effect sensor on or at said at least one clutch.

58. A data collection and display system as in Claim 56, wherein said at least one sensing means monitoring a conductor, said conductor transmitting said control of said driving force to said at least one clutch, said one sensing means comprised of a clampon induction sensor or an in-line induction sensor or an in-line serlies current sensor.

59. A data collection and display system as in Claim 55 wherein, said image is at least one bar chart, scalar bar chart, and/or an image displaying the torque and/or braking force delivered to the wheels and/or an image displaying the torque and/or braking delivered to the front pair of wheels and to the rear pair of wheels and/or an image displaying the slippage of one or more wheels with regard to the other wheels.

60. A data collection and display system as in Claim 55 wherein, said image is comprised of a display varying in time in one or more characteristics to include color, hue, shading, density of cross hatching, contrast, content, shape, orientation, pattern and/or illumination.

61. A data collection and display system as in Claim 55 wherein said at least one display means is an LED, LCD, vacuum florescent means, GPS display and/or trip computer, numerical display, gauge, meter and/or PDA.

62. A data collection and display system for a four-wheel drive vehicle, including a frame supported by wheels for movement over the ground, said wheels comprised of a pair of front wheels, and a pair of rear wheels, one of said pairs being main drive wheels, and the other of said pairs being auxiliary drive wheels, a driving force control system having a CPU, said CPU controlling engagement forces of at least one clutch to thereby control at least one driving force distributed to said auxiliary drive wheels, a power source which is mounted on the frame and which drives at least two of the wheels, an operator's seat mounted on the frame, a steering system enabling the operator to steer the vehicle,

said data collection and display system comprising:

at least one sensing means providing an input signal to said CPU,

at least one display signal is generated by said CPU based on said input signal, said display signal proportional to said at least one driving force,

at least one display device,

whereby said at least one display signal is transferred from said CPU to said display device, said display device displaying an image proportional to said driving force to the operator.

63. A data collection and display system as in Claim 62, wherein said at least one clutch is an electromagnetic clutch.